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Two new species of the genus *Achaenops* SUFFRIAN, 1857 from Western Cape, South Africa (Coleoptera: Chrysomelidae: Cryptocephalinae)

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ABSTRACT. Two new species of the genus *Achaenops* SUFFRIAN, 1857, *A. thoracicus* sp. n. and *A. tablensis* sp. n. from the Western Cape Province of South Africa, are described and illustrated. *Achaenops thoracicus* differs from all other species in the genus by the puncturation of its pronotum, inflated prothorax, and extended fore tarsi in males. Males of *A. tablensis* show characteristic extended, lobate genae. The genus *Achaenops* is known from South Africa only

Key words: entomology, taxonomy, Chrysomelidae, Cryptocephalinae, Cryptocephalini, Achaenopina, Afrotropical, South Africa.

INTRODUCTION

The sub-tribe Achaenopina CLAVAREAU, 1913, of the leaf beetle subfamily Cryptocephalinae, includes only the genus *Achaenops* SUFFRIAN, 1857 and is endemic to southern Africa. *Achaenops* was described by monotypy and remained relatively unknown until recently, when it was shown to be more diverse and distributed predominantly in the Western Cape Province (SCHÖLLER 2006; 2013; 2014a). *Achaenops* spp. can be readily distinguished, from species of *Cryptocephalus* GEOFFROY, 1762 of similar size, by their bordered basal pronotal margin and from *Acolastus* GERSTAECKER, 1855 spp. it can be distinguished by their broad prosternal process (SCHÖLLER 2014b). In this contribution, two new species are described from the Western Cape Province of South Africa, bringing the total number of described species in the genus to 13.

MATERIALS AND METHODS

Included in this study are specimens located in the following collections:

BMNH = The Natural History Museum, London, United Kingdom (M. BARCLAY);

ZMHB = Museum für Naturkunde, Leibniz-Gemeinschaft, Berlin, Germany (J. FRISCH and M. UHLIG);

NHRS = Naturhistoriska Riksmuseet, Stockholm, Sweden (J. BERGSTEN);

SANC = South African National Collection of Insects, Pretoria, South Africa (E. GROBBELAAR).

Label data are cited *verbatim* for type specimens. A double forward slash (//) separates data from different labels, and a single forward slash (/) separates data from different lines on the same label. The data are printed, unless otherwise stated, and the author's remarks are presented in brackets: (ink) = preceding data are hand-written, and [white] = white label. Paratypes are individually labelled, and listed in the text as follows: number of specimens, sex, and collection in which they are housed. The paratype number is on the reverse side of this label. Dried adults were softened in hot water prior to dissection. The abdomen was then dissected from the thorax in water, and its contents were removed. They were subsequently soaked in cold 10% KOH for 1 hour and then rinsed in distilled water. The aedeagus, spermatheca, and gut containing the kotpresse were dissected from the rest of the tissue. Eye length was measured in lateral view, and the interocular space in frontal view at the narrowest point. All measurements were made using an ocular grid mounted on a stereomicroscope (20 × magnification for the body length; 40-70 × magnification for the remaining measurements). Habitus photographs were taken with a Nikon D5100 digital camera, and then stacked with Combine Z software.

Observed variation within a species has been recorded as follows: size [mm] (mean ± standard deviation (max., min., n)).

DESCRIPTION OF TWO NEW SPECIES

Achaenops thoracicus n. sp.

(Figs 1-8)

ETYMOLOGY

The Latin term *thorax* means chest, the name refers to the large prothorax found in males of this species.

TYPE SPECIMENS

Holotype (male, SANC): SOUTH AFRICA, C.P. / Rooiels 34.18 S / 18.49 E; 24.xii.1989 / B. Grobbelaar [white label] // NATIONAL COLL. / OF INSECTS / Pretoria, S.Afr. [white label] // HOLOTYPE *Achaenops* / *thoracicus* des. C. Adarkwah & M. Schöller [red label]. 20 paratypes: 4 males (paratype numbers 1-4), 8 females

BMNH (paratype numbers 5-12); 1 male (paratype number 13), 2 females ZMHB (paratype numbers 14-15): Table Mt. / Cape of G. Hope [blue line] / W. Bevins. / 1906-167.; 3 males, 1 female NHRS (paratype numbers 16-19): Afrika // GDeV // Riksmuseum Stockholm [green]; 1 male BMNH (paratype number 20): Cape Province. / Swellendam. / ii.1932 // S. Africa. [blue line] / R.E.Turner / Brit. Mus. / 1932-145.; all paratypes have the following authors label: PARATYPUS *Achaenops* / *thoracicus* n.sp. / des. C. Adarkwah & M. Schöller [red label].

TYPE LOCALITY

Rooiels, Republic of South Africa, a small settlement about 51.5 km SE of Table Mountain (ca. 34°18'13.49"S 18°48'59.92"E).

DIAGNOSIS

A medium sized dark reddish- to blackish-brown species (Figs 1-2); pronotum impunctate basally antieriad of scutellum, finely punctate anteriorly, coarsely punctate laterally, and not shagreened; elytra regularly punctate striate; clypeus unmodified; and prothorax inflated, as broad as elytra basally in males. Differs from *A. monstruosus* SCHÖLLER, 2006 by its smaller size, different puncturation of the pronotum, and unmodified clypeus.

DESCRIPTION

Male, holotype: length 2.05 mm, elytral width at humeri 1.15 mm, pronotal length 0.65 mm and pronotal width 1.15 mm, and length of antenna 1 mm.



1-2. *Achaenops thoracicus* sp.n., habitus: 1 – male, 2 – female. Scale bar = 1 mm

Head. Visible in dorsal view, blackish-brown, shiny, with dense, coarse and deep punctures, finely shagreened; antennae uniformly yellowish brown; labrum brown with pale yellow anterior margin; mandibles brown; labial palpi acute; eyes small with dorsal lobes distant, distance between dorsal lobes 1.5 times eye length, eyes evenly convex, with deep triangular canthus; antenna short 0.45 x body length, antennomeres 5-11 apically expanded, antennae inserted on frons between ventral lobes of eyes.

Thorax. Pronotum blackish-brown and shiny, prothorax dark reddish-brown ventrally; pronotum transverse, broader than base of elytra basally, lateral margins narrow, visible in dorsal view towards posterior angles; posterior angles with an extended setigerous pore, and median lobe of basal margin truncate and slightly raised; impunctate basally anteriorly of scutellum, finely punctate anteriorly, and coarsely punctate laterally, not shagreened; intercoxal prosternal process elongate, slightly narrower than width of coxal cavity, anterior margin convex with a broad carina, and truncate basally; hypomeron densely and coarsely punctured; scutellum narrowly triangular, raised above the elytra apically; elytra reddish dark brown, epipleura pale reddish-brown; each elytron with eight regular rows of punctures plus a scutellar and a marginal row, interstices shiny, smooth; legs reddish-brown, fore femora and tibiae yellowish-brown; external edge of tibiae simple, fore tibiae only slightly longer than hind tibiae, and only slightly bent, no tibial spurs; fore tarsi broader than mid- and hind tarsi, tarsal claws small and simple.

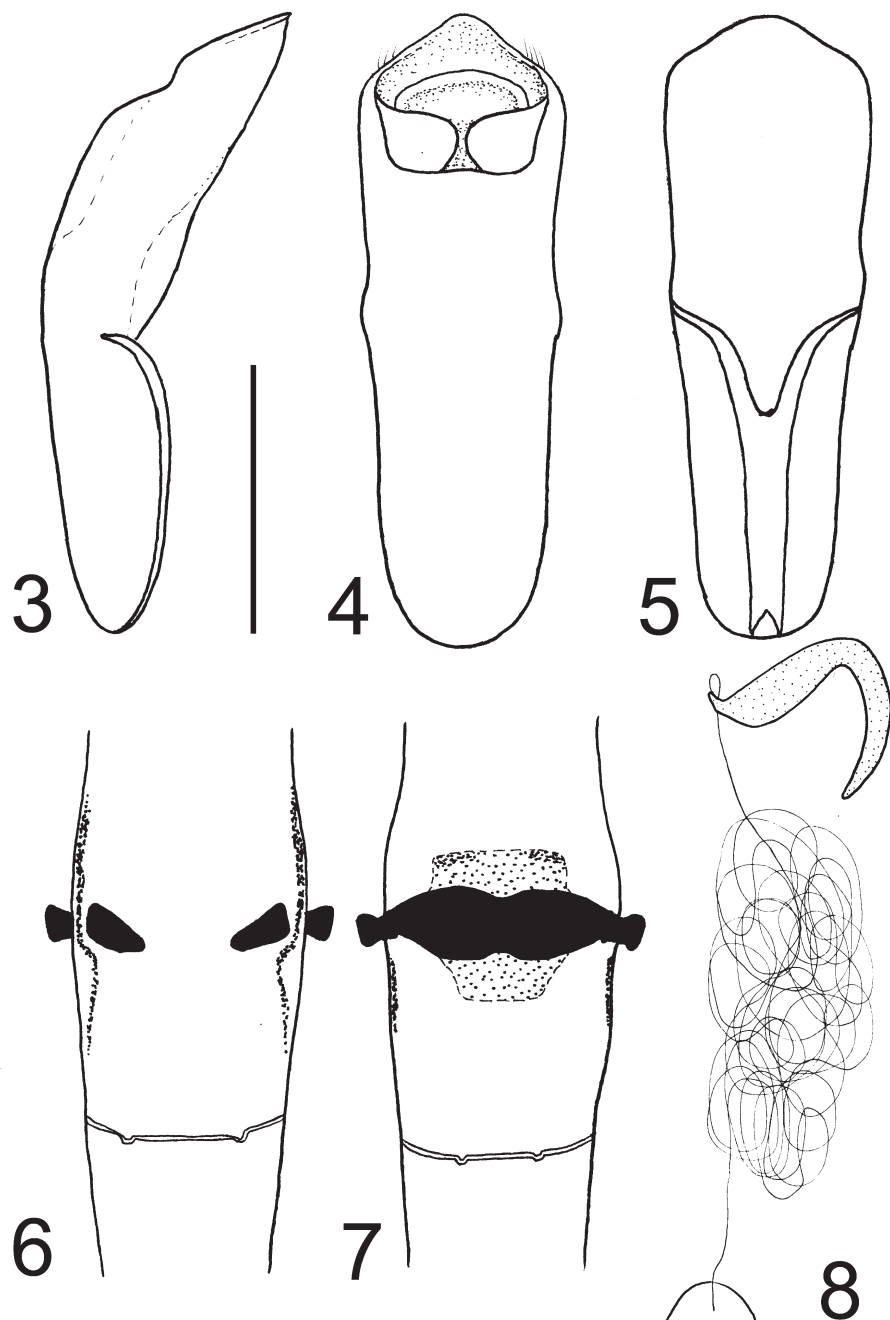
Abdomen. Venter blackish-brown; sternites and pygidium with coarse punctures and short white setae, pygidium shagreened and covered by elytra; aedeagus 0.55 mm long, moderately sclerotized, down-curved towards the apex in lateral view (Fig. 3) and concave ventrally (Fig. 5), apex triangular and symmetrical, with a pair of triangular frenula (sensu Sassi, 2014) and a transverse, semilunar endosclerite visible in the ostium (Fig. 4). Length of aedeagus 0.55 mm, and spiculum gastrale narrowly Y-shaped (Fig. 5).

Female

Head: As in male, but eyes medium-sized, distance between dorsal lobes 1.27 times eye length.

Thorax. Smaller than in male, more attenuate towards apex, sides more straight in dorsal view; legs yellowish brown.

Abdomen. Egg-hollow shallow, apical margin of apical ventrite shallowly convex; spermatheca pale brown, hook-shaped, with pump slightly shorter than reservoir, spermathecal duct emerging from a cone-shaped extension of the reservoir, duct very fine and densely coiled, coiled length ca. 0.5 mm (Fig. 8); kotpresse (= rectal apparatus for forming the faecal pellets covering the eggs, see ERBER 1968, SCHÖLLER 2008) with small, transversely triangular dorsal sclerites that narrow towards medial fold, dorsal sclerites not attached to sinuose sclerotization of the lateral fold, and no sclerotized areas posterior to dorsal sclerites (Fig. 6); ventral sclerite a broad crosswise band narrowing in the middle and towards either side and broader than the rectum, apodemes small, a pigmented ventral chitinopolster present both distally and proximally of the ventral sclerite, ventral sclerotizations of lateral fold present (Fig. 7).



3-8. *Achaenops thoracicus* sp.n.; 3-5 – aedeagus: 3 – lateral, 4 – dorsal, 5 – ventral; 6-7 – kotpresse: 6 – dorsal, 7 – ventral; 8 – spermatheca and spermathecal ductus. Scale bar = 0.2 mm

Variation

Little variation was found in size: length: male: $2.06 \text{ mm} \pm 0.04$ (2.10, 2.00, 5); female: $2.18 \text{ mm} \pm 0.04$ (2.25, 2.15, 5); width of elytra at humeri: male: $1.15 \text{ mm} \pm 0.01$ (1.15, 1.13, 5); female: $1.21 \text{ mm} \pm 0.01$ (1.23, 1.20, 5); length of elytron: male: $1.30 \text{ mm} \pm 0.04$ (1.35, 1.25, 5); female: 1.51 ± 0.06 (1.60, 1.45, 5); pronotum: length in male: $0.67 \text{ mm} \pm 0.03$ (0.70, 0.65, 5), width in male: $1.15 \text{ mm} \pm 0.00$ (1.15, 1.15, 5); pronotum: length in female: $0.66 \text{ mm} \pm 0.02$ (0.70, 0.65, 5), width in female: $1.16 \text{ mm} \pm 0.01$ (1.18, 1.15, 5); and length of antenna: male: $0.97 \text{ mm} \pm 0.03$ (1.00, 0.95, 5); female: $0.93 \text{ mm} \pm 0.06$ (1.03, 0.90, 5).

The distal ventral chitinpilster of the kotpresse is not always pigmented.

HOST PLANT

Unknown.

DISTRIBUTION

Known from the Western Cape Province only.

Achaenops tablensis n. sp.

(Figs 9-12)

ETYMOLOGY

The name refers to the collection site of the type series, Table Mountain.



9. *Achaenops tablensis* sp.n., habitus, male. Scale bar = 1 mm

TYPE SPECIMENS

Holotype (male, BMNH): Table Mt. / Cape of G. Hope [blue line] / W. Bevins. / 1906-167.// *Achaenops tablensis* n. sp. / HOLOTYPE des. C. Adarkwah & M. Schöller [red label].

2 paratypes: 1 male, BMNH (paratype number 1): same label as holotype; 1 male NHRS (paratype number 2) // Afrika // GDeV //; Riksmuseum Stockholm [green]; both paratypes have the following authors label: Paratypus *Achaenops* / *tablensis* n.sp. / des. C. Adarkwah & M. Schöller [red label].

TYPE LOCALITY

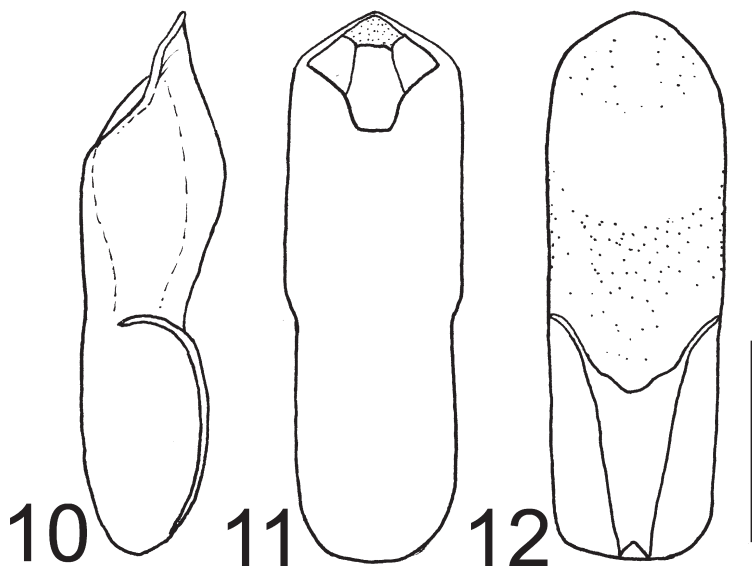
Republic South Africa, Table Mountain, Cape of Good Hope (33°57'S, 18°25'E).

DIAGNOSIS

A medium-sized species with a dark reddish- to blackish-brown head, pronotum, elytra, tarsi and venter, and orangey-brown legs; pronotum short in male and genae extended and lobate (Fig. 9). Differs from *A. dorsalis* SUFFRIAN, 1857 by the colouration of the pronotum and modified gena.

DESCRIPTION

Male, holotype: length 2.30 mm, elytral width at humeri 1.05 mm, elytral length 1.30 mm, pronotal length 0.65 mm and pronotal width 1.05 mm, and length of antenna 1.05.



10-12. *Achaenops tablensis* sp.n.; aedeagus: 10 – lateral, 11 – dorsal, 12 – ventral. Scale bar = 0.2 mm

Head. Visible in dorsal view, shiny, with few sparse coarse punctures, not shagreened, labrum yellowish-brown with dark brown apical margin, mandibles yellowish-brown, gena dark brown, extended and lobate; labial palpi acute; eyes small with dorsal lobes distant, distance between dorsal lobes 2.17 times eye length, eyes evenly convex, with very shallow canthus; antenna short, i.e. 0.47 x body length, antennomeres 1-4 yellowish-brown, antennomeres 5-11 dark brown, antennomeres 7-11 slightly expanded apically, antennae inserted on frons between ventral lobes of eyes.

Thorax. Pronotum blackish-brown and shiny; sub-rectangular and transverse, 1.91 times wider than long, lateral margins carinate and visible in dorsal view; median lobe of basal margin truncate, and slightly raised apically, pronotum feebly convex in lateral view; posterior angles with a setigerous pore; punctures very shallow and coarse, but distinct, very sparse on disc, becoming even more sparse laterally; intercoxal prosternal process elongate, 1.4 times longer than wide, 0.75 times the width of the coxal cavity, anterior and posterior margins straight without a carina; hypomeron impunctate; scutellum triangular, not raised above elytra apically; elytra each with 9 regular rows of fine punctures and a scutellar and a marginal row, striae slightly impressed, interstices shiny and smooth; epipleuron 2/3 the length of the elytron; all femora and tibiae orangey-brown, tarsi dark brown; no tibial spurs, fore tibiae slightly longer than hind tibiae, and slightly curved, claws small and simple.

Abdomen. Sternites with fine punctures and short white setae, last ventrite depressed medially, hind margin of apical visible ventrite truncate, slightly convex, pygidium with fine punctures and short white setae; elytra covering 50% of pygidium; aedeagus well sclerotized, dark brown, bulging ventrally in lateral view (Fig. 10), without a ventral ridge (Fig. 12), parallel sided in dorsal view with a symmetrical triangular tip, a pair of triangular frenula, and a central endosclerite visible in the ostium (Fig. 11), length of aedeagus 0.60 mm, spiculum gastrale broadly Y-shaped (Fig. 12).

HOST PLANT

Unknown.

DISTRIBUTION

Known from the type locality in the Western Cape Province only.

ACKNOWLEDGEMENTS

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